

Claims

1. A gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus frisingensis* containing a part of the base sequence or the whole base sequence represented by SEQ ID NO: 1.

2. A gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus frisingensis* containing a part of the base sequence or the whole base sequence represented by SEQ ID NO: 2.

3. A gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus cerevisiiphilus* containing a part of the base sequence or the whole base sequence represented by SEQ ID NO: 3.

4. A gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus cerevisiiphilus* containing a part of the base sequence or the whole base sequence represented by SEQ ID NO: 4.

5. An oligonucleotide characterized in that the gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus frisingensis* has at least one of the following sequence group or the corresponding complementary sequence:

5'-CCATCCTCTTGAAAATCTC-3' ①

5'-TCTCRTCTCACAAGTTTGGC-3' ②.

6. An oligonucleotide that the gene sequence of a spacer region between a gene coding 16S rRNA and a gene coding 23S rRNA of *Pectinatus cerevisiiphilus* has at least one of the following sequence group or the corresponding complementary sequence:

5'-CACTCTTACAAGTATCTAC-3' ③

5'-CCACAATATTTCCGACCAGC-3' ④

5'-AGTCTTCTCTACTGCCATGC-3' ⑤.

7. A method for detecting *Pectinatus frisingensis*, comprising employing the oligonucleotide made from the gene sequence described in claim 1 or 2 as a primer for synthesis of nucleic acids, and treating the nucleic acid by

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gene amplification to detect the bacteria.

8. A method for detecting *Pectinatus cerevisiiphilus*, comprising employing the oligonucleotide made from the gene sequence described in claim 3 or 4 as a primer for synthesis of nucleic acids, and treating the nucleic acid by gene amplification to detect the bacteria.

9. A method for detecting *Pectinatus frisingensis*, comprising employing the oligonucleotide made from the gene sequence described in claim 1 or 2, or the oligonucleotide made from the gene sequence described in claim 5, and a nucleotide sequence coding 16S rRNA gene of *Pectinatus frisingensis* as primers for synthesis of nucleic acids, and treating the nucleic acid by gene amplification to detect the bacteria.

10. A method for detecting *Pectinatus cerevisiiphilus*, comprising employing the oligonucleotide made from the gene sequence described in claim 3 or 4 or the oligonucleotide made from the gene sequence described in claim 6, and a nucleotide sequence coding 16S rRNA gene of *Pectinatus cerevisiiphilus* as primers for synthesis of nucleic acids, and treating the nucleic acid by gene amplification to detect the bacteria.

11. A method as claimed in claim 9, wherein the nucleotide sequence coding the 16S rRNA gene of *Pectinatus frisingensis* has the following sequence:

5'-CGTATCCAGAGATGGATATT-3' ⑥

12. A method as claimed in claim 10, wherein the nucleotide sequence coding the 16S rRNA gene of *Pectinatus cerevisiiphilus* has the following sequence:

5'-CGTATGCAGAGATGCATATT-3' ⑦